Appendix I:

Design Manual Volume III, Chapter 4 Adequate Road Facilities Requirements

Howard County Department of Planning and Zoning

Design Manual III, CHAPTER 4 ADEQUATE ROAD FACILITIES REQUIREMENTS

PURPOSE

- To determine "LEVEL OF SERVICE" of intersections and critical roadway segments within an impact area (1.5 miles PSA, 2.0 miles outside PSA) of a proposed development. Intersections studied are Major Collector(Burntwoods Rd) or higher in PSA. Minor collector(Font Hill) or higher outside the PSA. Study submitted with Sketch or Preliminary Equivalent Sketch Plan.

Exempt Developments

- Essential county government facilities (Police, fire, medical services, highway maintenance)
- Federal or state projects or county schools
- Agricultural subdivisions (family owned)
- Minor residential subdivision (4 lots or less)

Level of Service

Level of service range from A (free flow) to F (Jam condition)

*Acceptable Level of Service "D" county Roads

*Acceptable Level of Service "E" State Roads

Congested intersections include Level of Service ratings of "E" or "F."

Level of Service "E" = Critical Lane Volume from 1,450 to 1,600 (v/c range from 0.91 to 1.00 or 91% to 100% of capacity). Vehicles per hour.

Level of Service "F" = Critical Lane Volume greater than 1,600 (v/c range greater than 1.00 or 100% of capacity or greater).

The perfect intersection clears 100% of the waiting platoon of cars with each phase and cycle. Zero cars left over.

Traffic Volumes Counted in Study

- Existing traffic counts 7-9 am and 4-6 pm during the school year. Good for one year.
- Site generated traffic (projected from ITE)
- Background traffic from approved studies not yet constructed
- Future growth of 3% for 3 years. Projects with longer buildout assume 6% beyond 3 years.

Trip Generation and Trip Distribution

- Trip Generation: Rates determined from empirical formulas within the ITE (Institute of Transportation Engineers). Projects of similar characteristics.
- Trip Distribution: Trips generated by the proposed use will travel in all directions. Evaluate road uses, destinations, the proposed use, and percent of existing traffic.

Trip Generation

TRIP GENERATION RATES

LAND USE	FORMULA	DISTRIBUTION
General Office (ksf, ITE-710)		
	Ln(Morning Trips) = 0.80 x Ln(ksf) + 1.55	88/12
	Evening Trips = 1.12 x (ksf) + 78.81	17/83

TRIP GENERATION TOTALS

	MORNING PEAK HOUR			EVENING PEAK HOUR		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Phase 1						
108,000 sq.ft. General Office	175	24	199	34	166	200
Build-Out						
657,600 sq.ft. General Office	744	102	846	139	676	815

EXHIBIT 9
TRIP GENERATION FOR
BUSINESS PARK

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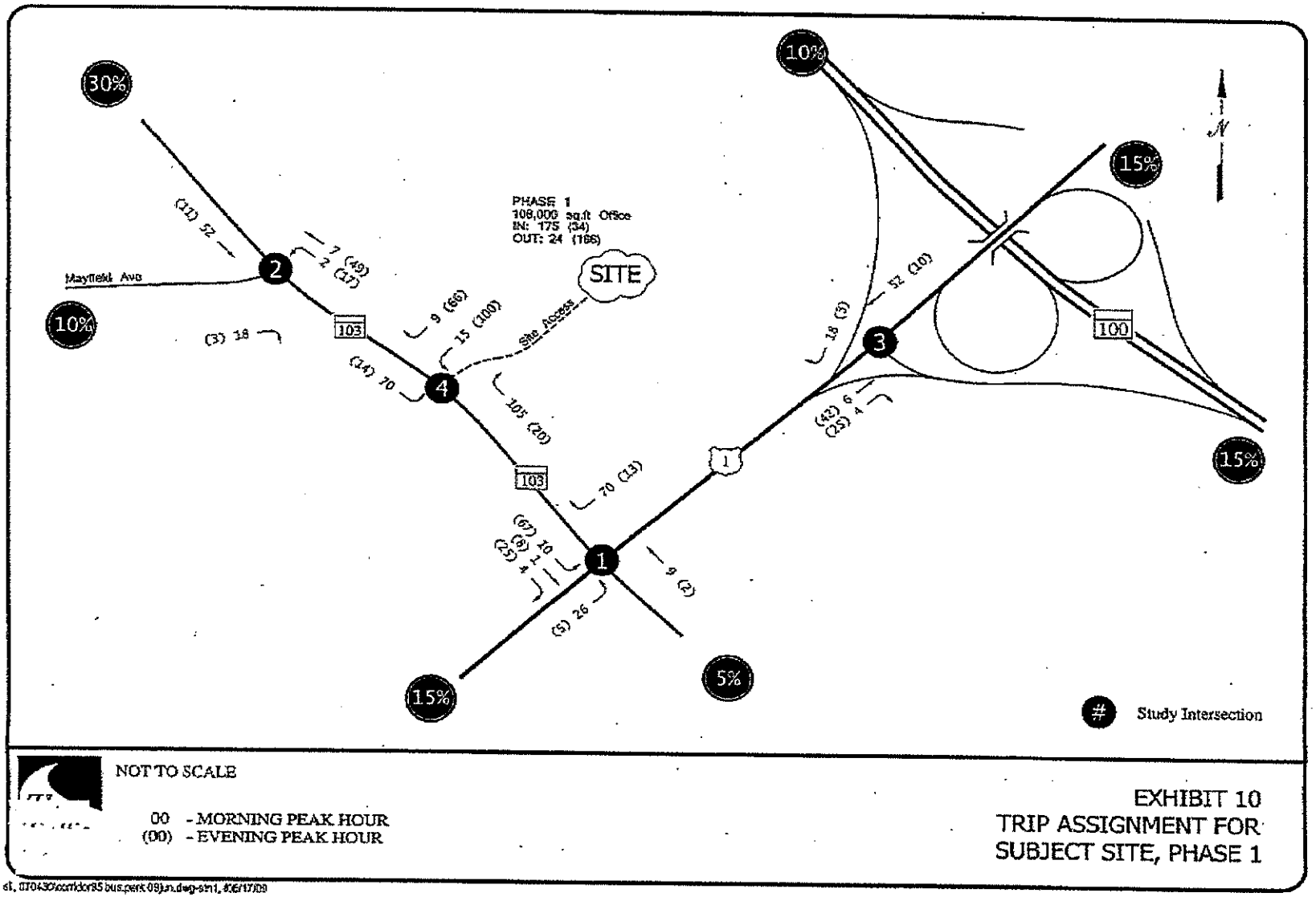
Trip Assignment



Results Summary

RESULTS OF INTERSECTION CAPACITY ANALYSIS

	EXISTING	YEAR 2011		YEAR 2028	
		BACKGR'D	TOTAL	BACKGR'D	TOTAL
MORNING PEAK HOUR TRAFFIC					
1. US 1 MD 103	C/1166	E/1455	E/1524	E/3374	F/3670
2. MD 103 & Mayfield Ave	A/906	C/1191	C/1261	F/2867	F/3164
3. US 1 & MD 100 EB Ramp	A/710	A/917	A/945	F/2231	F/2354
4. MD 103 & Site Access	—	—	B/1017	—	F/2599
EVENING PEAK HOUR TRAFFIC					
1. US 1 MD 103	C/1250	E/1520	E/1553	F/3577	F/3712
2. MD 103 & Mayfield Ave	A/704	A/985	B/1068	F/3278	F/3753
3. US 1 & MD 100 EB Ramp	A/997	C/1261	C/1284	F/3104	F/3196
4. Site Access & MD 103	—	—	A/768	—	F/2048

NOTE:

1. Background Traffic is derived from combining Existing Traffic, growth and traffic to be generated by approved developments.

2. Total Traffic is derived from combining Background Traffic and traffic to be generated by site.

EXHIBIT 12
RESULTS OF INTERSECTION
CAPACITY ANALYSIS (CLV)

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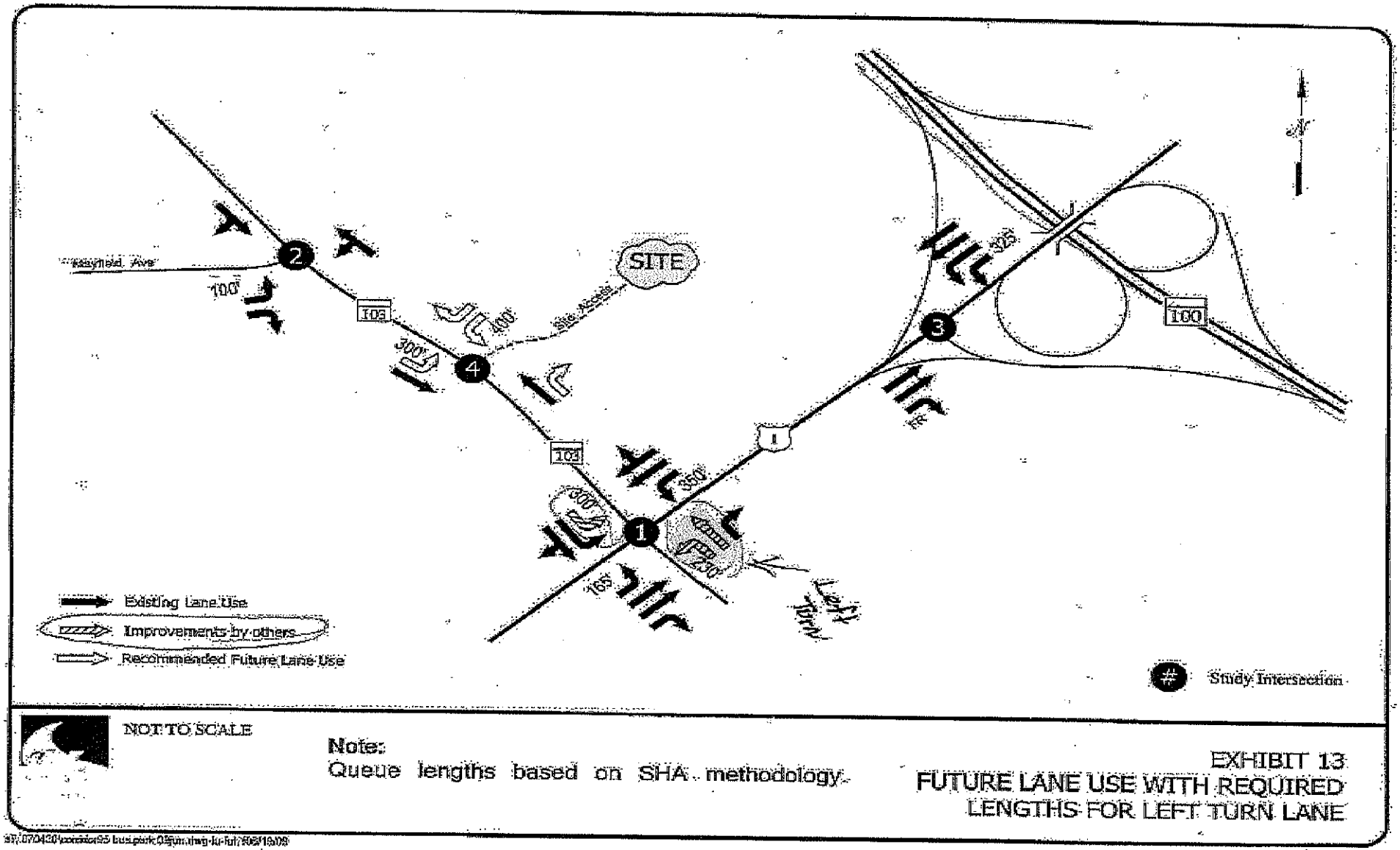
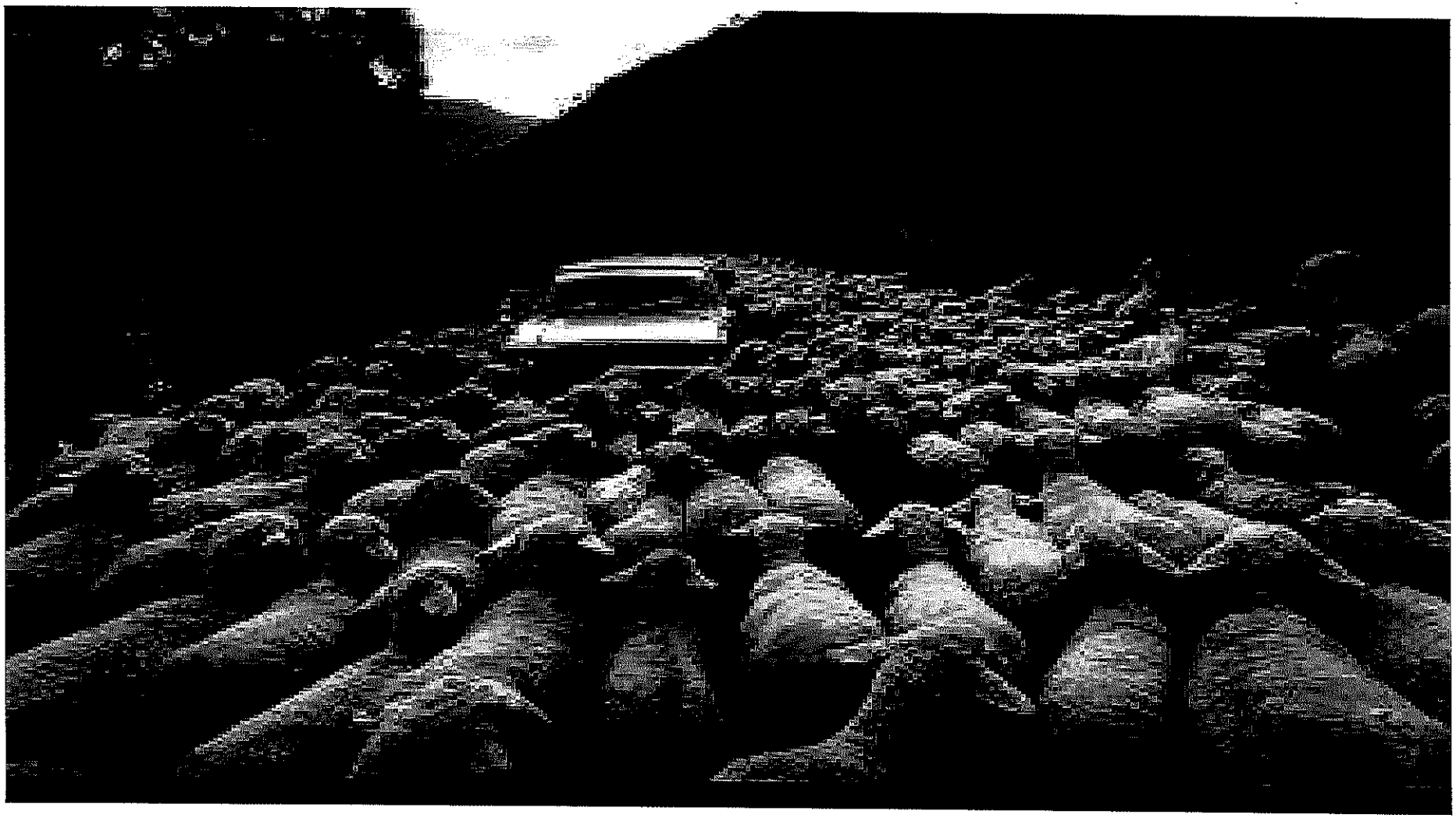
Lane Use Summary



Note:
Queue lengths based on SHA methodology.

EXHIBIT 13
FUTURE LANE USE WITH REQUIRED LENGTHS FOR LEFT TURN LANE

When this happens, mitigation is required



Mitigation

- If intersection fails the following options:
  - Defer project until someone else fixes the road
  - Reduce project Scope
  - Mitigate intersection with lane improvement
  - Shared developer or capital project fee